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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,925	03/12/2001	Ermanno Filippi	Q63473	7234

7590 11/29/2006

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EXAMINER	
BHAT, NINA	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/802,925	FILIPPI, ERMANNO	
	Examiner	Art Unit	
	N. Bhat	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☒ Claim(s) *2-6,8 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's arguments have been fully and carefully considered. Applicant has amended the claims to recite "A process for obtaining a heating fluid to be used as indirect heat source for carrying out endothermic reactions" but applicant never claims the obtained indirect heating fluid. Applicant has included in the claims "wherein said heating fluid and the products resulting from the endothermic reactions are totally independent on from the others". Applicant is reminded that the examiner can not read into the claims the specification which would be required because it is only with applicant's arguments of the references would one of ordinary skill in the art, recognize that the endothermic reactions are reforming reactions and further by definition of indirect the fluid flow within a heat exchanger would be independent from one another. As will be set forth below a new ground of rejection based on applicant's amendments is necessitated:

2. Claim 1 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 is incomplete as applicant does not claim the obtained heating fluid nor how exactly the heating fluid is obtained and what is meant by "said heating fluid and the products resulting from said endothermic reactions are totally independent one from the others". As state above, indirect means independent streams in the context of heat exchange, heat exchangers. In claim 7, again applicant has not exactly claimed how the indirect fluid is obtained. For example, in a heat exchanger, if you would use a dowtherm fluid (heat exchange fluid) indirectly,

to provide energy for carrying out endothermic reactions this would meet the limitations of both claims 1 and 7. Applicant needs to adequately describe the process how is the heating fluid produced and how it is different than just using a heat exchange fluid (which is independent)

3. Claims 2-6 are objected to as being dependent upon a rejected base claim.

4. In order to advance prosecution, several objections will be delineated. The examiner suggests to applicant to delete the "characterized by the fact" language and replace with --wherein-- in all of the claims. In claim 2, applicant should recite 0.1 to 0.7 times the flow. In claims 3, 5 and 6 applicant is suggested to put in a range for predetermined pressure and/or at least point to in the specification that "predetermined pressure" has been described and one having ordinary skill in the art would recognize what is meant by predetermined.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Blanc USP 5,001,625

Le Blanc teaches the invention substantially as claimed.

However, Le Blanc does not specifically that the amount of water to oxygen ratio as claimed by applicant nor that the water is added upstream of the combustor.

Le Blanc teaches a process of or autothermal steam reforming, the process as described provides a heating fluid to be used as an indirect heat source of carrying out endothermic reactions. The process include feed an flow of hydrocarbons and a gas flow comprising oxygen to a combustor burning the hydrocarbons in the presence of oxygen and obtaining a high temperature fluid comprising carbon dioxide and oxygen. Le Blanc further teaches the step of feeding a flow of water to the high temperature fluid or combustor by way of adding steam, or water vapor or a saturated hydrocarbon, which is added to the combustor. Le Blanc teaches that the fresh hydrocarbon feed in line (1) is saturated with water and combined with steam in line (2) and preheated in feed/effluent heat exchanged, a major portion of the hydrocarbon feed in line (4) is combined with addition steam and oxidant introduced in lines (5 and 6) which is then mixed and feed into the combustor. Le Blanc teaches that the water is heated upstream of the combustor but does not specifically recite the pressure. It would have been obvious from the teachings of Le Blanc to add water or steam or water vapor to the combustor in order to provide a heating fluid, which is used as an indirect heat source for carrying out endothermic reactions, this concept has been fully taught by Le Blanc. To add water in an amount to satisfy applicant's water to oxidant ratio would have been an obvious design choice to having ordinary skill in the art of reforming. The amount of saturated hydrocarbon or the heating fluid having heat sufficient enough to drive the endothermic reactions is based on heat and mass exchange taking place in the reactor.

The amount of heat required for autothermal reforming is well known and to manipulate the reactant amounts and water such as claimed by applicant based on the reaction conditions and reactor design is within the ordinary purview of the artisan familiar with reforming. Thus applicant's invention as a whole is rendered obvious by the teachings of Le Blanc.

8. Applicant has argued that the heating fluid for the (reforming) endothermic reactions and the products of such reactions are totally distinct. The latter being not used as indirect heating source of the endothermic reactions. Le Blanc is directed to autothermal steam reforming which means that the exothermic catalytic reforming zone to provide a first reformed gas. Le Blanc as applicant points out passes the first reformed gas which is made in the first zone from the exothermic reaction and a second reformed gas which is formed in a second zone by endothermic reaction with steam is combined and passed in indirect heat exchange with reactants in the endothermic reforming zone to provide all of the heat required. Applicant agues there is distinction but as claimed the "heating fluid" fluid and the products resulting from the endothermic reactions are totally independent, it is maintained that the heating fluid comprising the first reformate stream from exothermic reaction and second reformate from the endothermic reaction would constitute a heating fluid which is from reading Le Blanc used in indirect heat exchange with reactants and would still be readable on Le Blanc.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

N. Bhat
Primary Examiner
Art Unit 1764